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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,818	06/23/2003	Dieter Kress	P/2107-239	9834
2352	7590	03/20/2006	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			TALBOT, MICHAEL	
			ART UNIT	PAPER NUMBER
			3722	
DATE MAILED: 03/20/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,818

Applicant(s)

KRESS ET AL.

Examiner

Michael W. Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 16-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 and 16-23 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The objection to the drawings has been maintained because the “pin shaped elements” recited in claim 6 are still not clearly shown in the drawings. Applicant’s attempt to simply include character reference “62” within Figure 6 directed towards the insert “61” (which is shown as having a rectangular shape) has been deemed to be insufficient to clearly convey the corresponding shape of the “pin shaped elements” recited in claim 6.

Therefore, the drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “pin-shaped elements” recited in claim 6 must again be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The objection to the disclosure has been withdrawn due to Applicant's amendment filed 22 December 2005.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 20, it is not in proper format and is incomplete for omitting essential elements. The phrases "a tool according to claim 1" should be replaced with the desired structure.

Furthermore, it is still unclear as to the claimed limitation sought by the phrase "wherein the cutter tip is not required to be reset or adjusted when a respective active cutting edge thereof becomes worn". For examination purposes and as best understood, if a cutter tip is "capable of being reset or adjusted" but not necessarily "required to be" when a respective active cutting edge thereof becomes worn (i.e. has additional cutting edges which can be used), it is considered to meet the claim limitation as set forth.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1-5,7,9,14,15 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Breuning '842. Breuning '842 shows in Figures 1-6 a tool (20) comprising a hexagonal, indexable cutter tip (28) and two support regions/surfaces (41,43) for supporting the cutter tip being oriented with respect to each other at an angle (Figs. 4,5) such that a line bisecting the angle runs essentially perpendicular to an active cutting edge (portion 31 of side 31,32 on top surface 38 and portion 32 of side 31,32 on bottom surface). Breuning '842 shows an angle (β) between each side (31,32) of the cutter tip and an adjacent side (31,32) being substantially the same (Fig. 6) for each side of the cutter tip (col. 3, lines 8-21). Breuning '842 shows the cutter tip being turnable six times to make six cutting edges (col. 2, lines 28-29 and col. 3, lines 22-31).

The cutter shape is formed by the 25° rotation of two congruent equilateral triangles shown in Figs. 4 and 5. The angle formed by the support surfaces (41,43) is equal to an angle of the equilateral triangle. A line that bisects this angle will also bisect the opposing side at the midpoint. Since cutting edges (31,32) are of equal length (col. 3, lines 25-26), the bisecting line will fall on the active cutting edge (31 on top surface 38 and 32 on bottom surface) of each side (31,32) of the cutter tip.

Breuning '842 shows the main body having respective inserts (8) for defining the supporting regions being made of a material which is harder than the main body and being essentially rectangular in cross section. Breuning '842 shows the main body defining clearances (26) around the cutter tip at least in regions of the tool at the supporting regions.

6. Claims 1-3,9 and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kress et al. '549. Kress et al. '549 shows in Figures 1 and 2 a tool (1) comprising a hexagonal, indexable cutter tip (7/2) and two support regions/surfaces (15/2) for supporting the cutter tip being oriented with respect to each other at an angle (Fig. 2) such that a line bisecting the angle runs essentially perpendicular to an active cutting edge (outer edge). Kress et al. '549 shows

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an angle between each side (17) of the cutter tip and an adjacent side (17) being substantially the same (60° due to hexagonal construction shown in Fig. 2) for each side of the cutter tip. Kress et al. '549 shows the cutter tip being turnable six times to make six cutting. Kress et al. '549 shows the main body (3) shaped to define clearances (void near 17 shown in Fig. 2) around the cutting tip at least in regions on the tool at the supporting regions for the cutting tip. Kress et al. '549 shows the indexable cutting tip not requiring "resetting and adjusting devices" to further manipulate the cutter tip following initial positioning within the support surfaces (15/2) of the tool holder, only rotation or indexing is required once a respective active cutting edge becomes worn.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breuning '842 in view of Erickson '650. Breuning '842 lacks the members used to define the supporting regions being pin-shaped elements. Erickson '650 shows in Figures 1-3 and 8 a cutter tip (12) having inserts (14,24) that define the supporting regions of the cutter tip. In view of this teaching of Erickson '650, it would have been obvious to one of ordinary skill in the art to modify the insert that define the supporting regions of Breuning '842 with an alternate shape insert supporting member of Royal et al. '198 to provide an enhance clamping structure for the cutter tip (col. 1, lines 45-57) thus improving cutting efficiency and limiting wear.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breuning '842 in view of Satran et al. '724. Satran et al. '724 lacks the inserts being made of at least one of the

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group consisting of metal carbide, ceramic and cubical boron nitride (CBN). Satran et al. '724 shows in Figure 1 an insert (11) being made from metal carbide (col. 3, lines 47-51). In view of this teaching of Satran et al. '724, it would have been obvious to one of ordinary skill in the art to replace the insert of Breuning '842 with a metal carbide insert of Satran et al. '724 to provide a much harder cutting tip requiring minimal manufacturing resulting in a member that can be mass produced at a lower cost than conventional inserts (col. 2, lines 45-58).

10. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breuning '842 in view of Royal et al. '198. Breuning '842 lacks the cutter tip being affixed to the tool by a clamping arm with a lubricant/coolant system. Royal et al. '198 shows in Figures 3-5 a cutter tip (34) being secured to the tool by a clamping block (38) constructed with a lubricant/coolant system (Fig. 5) having an elongated coolant outlet (72,74,76) to disperse lubricant/coolant fluid toward the cutting edge (36). In view of this teaching of Royal et al. '198, it would have been obvious to one of ordinary skill in the art to modify the screw securement means of the cutter tip of Breuning '842 with the clamping block of Royal et al. '198 to provide a dual functional clamping element that will enhance chip removal by breaking the chip material into smaller pieces thus improving cutting efficiency and limiting wear.

11. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '549 in view of Royal et al. '198. Kress et al. '549 lacks the cutter tip being affixed to the tool by a clamping arm with a lubricant/coolant system. Royal et al. '198 shows in Figures 3-5 a cutter tip (34) being secured to the tool by a clamping block (38) constructed with a lubricant/coolant system (Fig. 5) having an elongated coolant outlet (72,74,76) to disperse lubricant/coolant fluid toward the cutting edge (36). In view of this teaching of Royal et al. '198, it would have been obvious to one of ordinary skill in the art to modify the securement means of the cutter tip of Kress et al. '549 with the clamping block of Royal et al. '198 to provide a dual

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functional clamping element that will enhance chip removal by breaking the chip material into smaller pieces thus improving cutting efficiency and limiting wear.

12. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breuning '842 in view of Link et al. '155. Breuning '842 lacks the cutter tip being made of cubical boron nitride (CBN). Link et al. '155 shows in Figures 1 and 2 a tool (10) having indexable CBN (col. 6, line 64 through col. 7, line 3) cutting tips (15,16,17). In view of this teaching of Link et al. '155, it would have been obvious to one of ordinary skill in the art to replace the cutter tip of Breuning '842 with a cubical boron nitride (CBN) cutter tip of Link et al. '155 to provide a more durable, more wear resistance, improved chip control cutting tip that will extend the service life of the cutter tip.

13. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '549 in view of Link et al. '155. Kress et al. '549 lacks the cutter tip being made of cubical boron nitride (CBN). Link et al. '155 shows in Figures 1 and 2 a tool (10) having indexable CBN (col. 6, line 64 through col. 7, line 3) cutting tips (15,16,17). In view of this teaching of Link et al. '155, it would have been obvious to one of ordinary skill in the art to replace the cutter tip of Kress et al. '549 with a cubical boron nitride (CBN) cutter tip of Link et al. '155 to provide a more durable, more wear resistance, improved chip control cutting tip that will extend the service life of the cutter tip.

14. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breuning '842 in view of Hellstrom et al. '081. Breuning '842 lacks the cutter tip having a flank that includes regions of different angles of inclination. Hellstrom et al. '081 shows in Figures 6-8 a cutter tip (15') having a flank surface (22',50,23'). In view of this teaching of Hellstrom et al. '081, it would have been obvious to one of ordinary skill in the art to replace the cutter tip of Breuning '842 with a different shaped cutter tip having flank surfaces of Hellstrom et al. '081 to increase the

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versatility of the cutting insert due to its compatibility with a larger number of tool seats and to limit wear of the non-active sides.

15. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '549 in view of Hellstrom et al. '081. Kress et al. '549 lacks the cutter tip having a flank that includes regions of different angles of inclination. Hellstrom et al. '081 shows in Figures 6-8 a cutter tip (15') having a flank surface (22',50,23'). In view of this teaching of Hellstrom et al. '081, it would have been obvious to one of ordinary skill in the art to replace the cutter tip of Kress et al. '549 with a different shaped cutter tip having flank surfaces of Hellstrom et al. '081 to increase the versatility of the cutting insert due to its compatibility with a larger number of tool seats and to limit wear of the non-active sides.

16. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breuning '842 in view of Link et al. '155. Breuning '842 lacks the specific application of metal-cutting machining of valve seats in cylinder heads of internal combustion engines. Link et al. '155 shows a tool (10) having indexable cutting tips (15,16,17) for the application of metal-cutting machining of valve seats (25) in cylinder heads (14) of internal combustion engines along the tool/valve opening axis (23) wherein the cutter tip is not required to be reset or adjusted when a respective active cutting edge thereof becomes worn. In view of this teaching of Link et al. '155, it would have been obvious to one of ordinary skill in the art to use the tool of Breuning '842 for the specific application taught by Link et al. '155 since this tool inherently has been described applicable for various machining applications (col. 4, lines 1-23 and lines 32-37).

17. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '549 in view of Link et al. '155. Kress et al. '549 lacks the specific application of metal-cutting machining of valve seats in cylinder heads of internal combustion engines. Link et al. '155 shows a tool (10) having indexable cutting tips (15,16,17) for the application of metal-cutting

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machining of valve seats (25) in cylinder heads (14) of internal combustion engines along the tool/valve opening axis (23) wherein the cutter tip is not required to be reset or adjusted when a respective active cutting edge thereof becomes worn. In view of this teaching of Link et al. '155, it would have been obvious to one of ordinary skill in the art to use the tool of Kress et al. '549 for the specific application taught by Link et al. '155 since this tool inherently has been described applicable for various machining applications (col. 4, lines 1-23 and lines 32-37).

Response to Arguments

18. Applicant's arguments filed 22 December 2005 have been fully considered but they are not persuasive with respect to 35 U.S.C. 112, second paragraph.

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. With respect to claim 20, Applicant is arguing the fact that "resetting and adjusting devices" are not required to further manipulate the cutter tip following initial positioning within the support surfaces of the tool holder. Only rotation or indexing is required once a respective active cutting edge becomes worn.

19. Applicant's arguments, see page 13, 4th paragraph through page 14, 2nd complete paragraph, filed 22 December 2005, with respect to the rejection(s) of claim(s) 20-22 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kress et al. '549 as described above.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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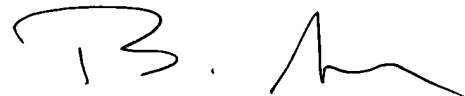
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

21. Any inquiry concerning the content of this communication from the examiner should be directed to Michael W. Talbot, whose telephone number is 571-272-4481. The examiner's office hours are typically 8:30am until 5:00pm, Monday through Friday. The examiner's supervisor, Mr. Boyer D. Ashley, may be reached at 571-272-4502.

In order to reduce pendency and avoid potential delays, group 3720 is encouraging FAXing of responses to Office Actions directly into the Group at FAX number 571-273-8300. This practice may be used for filling papers not requiring a fee. It may also be used for filing papers, which require a fee, by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Michael W. Talbot of Art Unit 3722 at the top of your cover sheet.



MWT
Examiner
14 March 2006



BOYER D. ASHLEY
SUPERVISORY PATENT EXAMINER